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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

(Rationalised Report according to the Notice of the President of the EPO published in the OJ11/2001)

10/03/041

| | | |
|--|---|---|
| Applicant's or agent's file reference 1327-DARPA | FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416) | |
| International application No. PCT/US 01/ 16697 | International filing date (day/month/year) 23/05/2001 | Priority date (day/month/year) 30/05/2000 |
| International Patent Classification (IPC) or national classification and IPC H01J49/00 | | |
| Applicant THE JOHNS HOPKINS UNIVERSITY et al. | | |


1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This **REPORT** consists of a total of 2 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

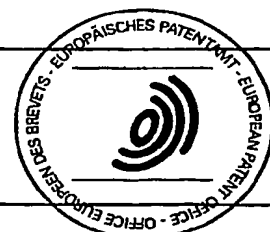
These annexes consists of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

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| | |
|---|--|
| Date of submission of the demand 13/12/2001 | Date of completion of this report 26/11/2002 |
| Name and mailing address of the IPEA/  European Patent Office D-80298 Munich Tel. (+49-89) 2399-0, Tx: 523656 epmu d Fax: (+49-89) 2399-4465 | Authorized officer HUBEAU M G Tel. (+49-89) 2399 2828 |



I. Basis of the report

The basis of this international preliminary examination is the application as originally filed.

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability

In light of the documents cited in the international search report, it is considered that the invention as defined in the claims meets the criteria mentioned in Article 33 (1) PCT, i.e. it appears to be novel, to involve an inventive step and to be industrially applicable.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/16697

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01J49/04 H01J49/40

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

INSPEC, EPO-Internal, COMPENDEX, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| E | WO 01 92863 A (EVANCICH NICHOLAS H ;VELKY JAMES T (US); BRYDEN WAYNE A (US); CARL) 6 December 2001 (2001-12-06) claims 1-33 | 1 |
| A | US 5 998 215 A (MAYER JOSEPH E ET AL) 7 December 1999 (1999-12-07) claims 1,2 | 1 |
| A | US 4 296 322 A (WECHSUNG REINER) 20 October 1981 (1981-10-20) claims 1-4 | 1 |
| A | US 5 313 061 A (DREW RUSSELL C ET AL) 17 May 1994 (1994-05-17) claim 1 | 1 |
| | --- -/- | |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *G* document member of the same patent family

Date of the actual completion of the international search

13 September 2002

Date of mailing of the international search report

20/09/2002

Name and mailing address of the ISA

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Authorized officer

Van den Bulcke, E

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/16697

| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|---|-----------------------|
| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| A | <p>US 4 178 507 A (BRUNNEE CURT ET AL) 11 December 1979 (1979-12-11) claims 1-14</p> <p>-----</p> | 1 |

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/16697

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|---|---------------------|----------------------------|---------------------|
| WO 0192863 | A | 06-12-2001 | AU 7583501 A | 11-12-2001 |
| | | | AU 8043901 A | 11-12-2001 |
| | | | WO 0192863 A2 | 06-12-2001 |
| | | | WO 0193308 A2 | 06-12-2001 |
| US 5998215 | A | 07-12-1999 | US 5681752 A | 28-10-1997 |
| | | | AU 9676798 A | 27-04-1999 |
| | | | DE 19882719 T0 | 21-09-2000 |
| | | | WO 9918595 A1 | 15-04-1999 |
| US 4296322 | A | 20-10-1981 | DE 2837715 A1 | 13-03-1980 |
| | | | FR 2435033 A1 | 28-03-1980 |
| | | | GB 2029634 A ,B | 19-03-1980 |
| | | | IT 1122910 B | 30-04-1986 |
| US 5313061 | A | 17-05-1994 | AU 5856490 A | 08-01-1991 |
| | | | CA 2058763 A1 | 07-12-1990 |
| | | | DE 69028304 D1 | 02-10-1996 |
| | | | DE 69028304 T2 | 24-04-1997 |
| | | | EP 0476062 A1 | 25-03-1992 |
| | | | GB 2249662 A ,B | 13-05-1992 |
| | | | JP 5500726 T | 12-02-1993 |
| | | | WO 9015658 A1 | 27-12-1990 |
| US 4178507 | A | 11-12-1979 | DE 2654057 B1 | 27-04-1978 |
| | | | US 4259572 A | 31-03-1981 |

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(25) Filing Language: English

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(30) Priority Data:
60/207,825 30 May 2000 (30.05.2000) US

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(72) Inventors; and

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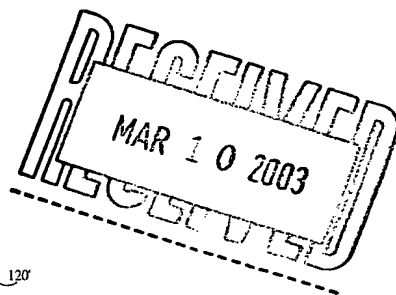
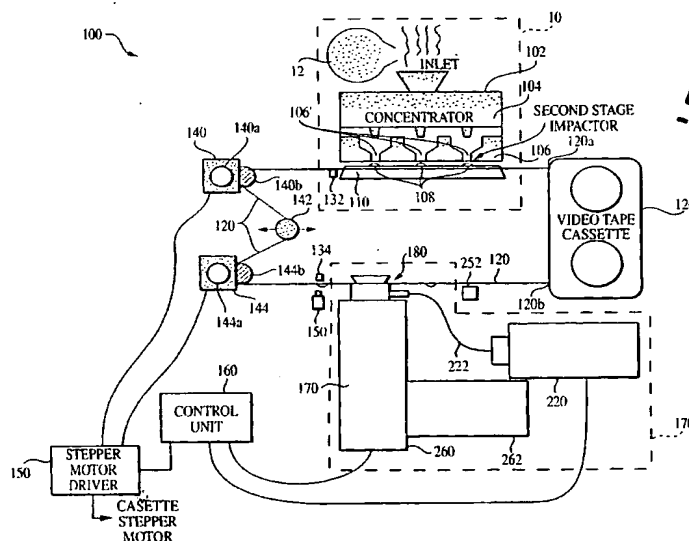
(74) Agents: **COOCH, Francis, A.** et al.; The Johns Hopkins University, Applied Physics Laboratory, 11100 Johns Hopkins Road, Laurel, MD 20723-6099 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: SAMPLE COLLECTION PREPARATION METHODS FOR TIME-OF-FLIGHT MINIATURE MASS SPECTROMETER



(57) Abstract: A field portable mass spectrometer system comprising a sample collector and a sample transporter. The sample transporter interfaces with the sample collector to receive sample deposits thereon. The system further comprises a time of flight (TOF) mass spectrometer. The time of flight mass spectrometer has a sealable opening that receives the sample transported via the sample transporter in an extraction region of the mass spectrometer. The system further comprises a control unit that processes a time series output by the mass spectrometer for a received sample and identifies one or more agents contained in the sample.

WO 01/093307 A3

WO 01/093307 A3



Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

16 January 2003

PATENT COOPERATION TREATY

PCT/IB/331/1007

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
US Department of Commerce
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Office, PCT
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in its capacity as elected Office

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| International filing date (day/month/year) 23 May 2001 (23.05.01) | Priority date (day/month/year) 30 May 2000 (30.05.00) |
| Applicant ANDERSON, Charles, W. et al | |

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:
13 December 2001 (13.12.01)

☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

| | |
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| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35 | Authorized officer R. Forax Telephone No.: (41-22) 338.83.38 |
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